

**TABLE 1: ELECTRICAL SPECIFICATIONS AT 25 °C**

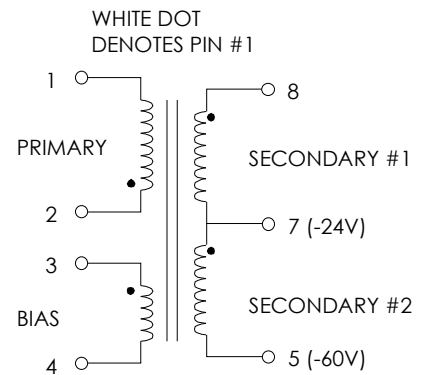
SWITCHING TRANSFORMER DESIGNED FOR USE WITH POWER INTEGRATIONS TOP222YAI. REFER TO APPLICATION CIRCUIT OF FIGURE 3.

PARAMETER	SPEC LIMITS			UNITS
	MIN.	TYP.	MAX.	
PRIMARY INDUCTANCE (2-1) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	1400	1500	1600	μHY
TURN RATIO'S: SEC #1 (8-7) : PRIMARY (2-1) SEC #2 (7-5) : PRIMARY (2-1) BIAS (3-4) : PRIMARY (2-1)	-----	1 : 4.5 1 : 3.0 1 : 9.0	-----	± 4% ± 4% ± 4%
PRI LEAKAGE IND. (SEC SHORTED) VOLTAGE = 0.250Vrms FREQUENCY = 100 KHZ	-----	-----	100	μHY
HIPOT: PRIMARY & BIAS TO SECONDARIES PRIMARY TO BIAS	3000 600	----- -----	----- -----	Vrms Vrms
APP CIRCUIT PARAMETERS: (1) AC LINE VOLTAGE 60 Hz OUTPUT VOLTAGE SEC #1 OUTPUT CURRENT CONTINUOUS OUTPUT VOLTAGE SEC#2 OUTPUT CURRENT CONTINUOUS LINE REGULATION (85 TO 132Vac) LOAD REGULATION 20-100% RIPPLE	85 ----- 0.0 ----- 0.0 ----- ----- ----- -----	----- -24 (2) ----- -60 (2) ----- 0.50 ----- 1.00 ----- 50.0	132 ----- 0.300 ----- 0.130 ----- ----- ----- -----	Vac Vdc Amps Vdc Amps ±% ±% ±mV

(1) REFER TO APPLICATION CIRCUIT OF FIGURE 3.

(2) ONLY USE EITHER -24V OR -60V CAN NOT USE BOTH OUT PUT AT THE SAME TIME

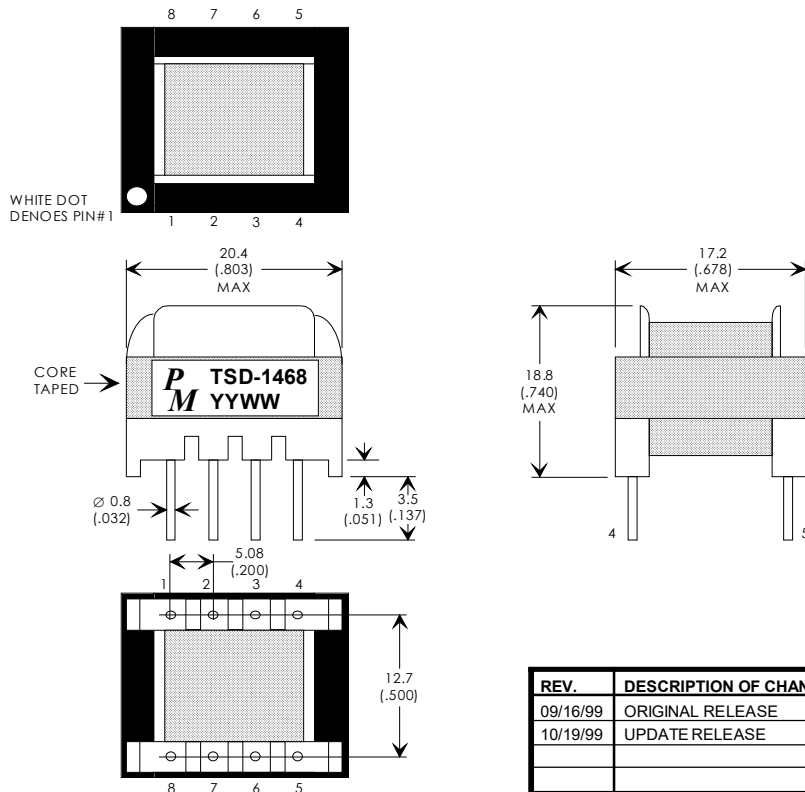
**FIGURE 1: SCHEMATIC DIAGRAM**



**NOTE1: DESIGNED TO MEET UL1950, IEC950, & CSA-950 REQUIREMENTS:**

- A) ALL MATERIALS MEET "UL", "CSA" & "IEC" REQUIREMENTS
- B) MARGIN WOUND FOR ≥6.2mm CREEPAGE REQUIREMENTS.
- C) VARNISH FINISHED ASSEMBLY.

**FIGURE 2: PHYSICAL DIMENSIONS mm (INCHES)**



REV.	DESCRIPTION OF CHANGES	BY
09/16/99	ORIGINAL RELEASE	PP
10/19/99	UPDATE RELEASE	PP

RoHS



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM DIMENSIONAL TOLERANCES ARE:  
DECIMALS ANGLES  
.X ± .25 ±0° 30'  
XX ± .15  
DO NOT SCALE DRAWING

**TRANSFORMER CONTROL DRAWING**

PREMIER P/N: TSD-1468	REVISION: 10/19/99
DRAWN BY: PETER PHAM	REF: PWR-TOP222YAI
SCALE: NONE	SHEET: 1 OF 2

# APPLICATION NOTES

Premier Magnetic's TSD-1468 Switch Mode Transformer was designed for use with Power Integrations, Inc. TOP222Y three terminal off-line PWM switching regulator in the Flyback Buck-Boost circuit configuration. This conversion topology can provide isolated multiple outputs with efficiencies up to 90%. Premier's TSD-1468 transformer has been optimized to provide maximum power throughput.

The PWR-TOPXXX series from Power Integrations, Inc. are self contained 100KHz three terminal voltage controlled PWM switching regulators. This series contains all necessary functions for an off-line switched mode control DC power source. These switching regulators provide a very simple solution to off-line designs. The inductors and transformer used with the PWR-TOPXXX are critical to the performance of the circuit. They define the overall efficiency, output power and overall physical size.

Below is a universal input with Output 7.8 watt application circuit utilizing Power Integrations TOP222 switching regulator in the flyback buck-boost configuration. The Output only use either -24VDC or -60VDC. The component values listed are intended for reference purposes only.

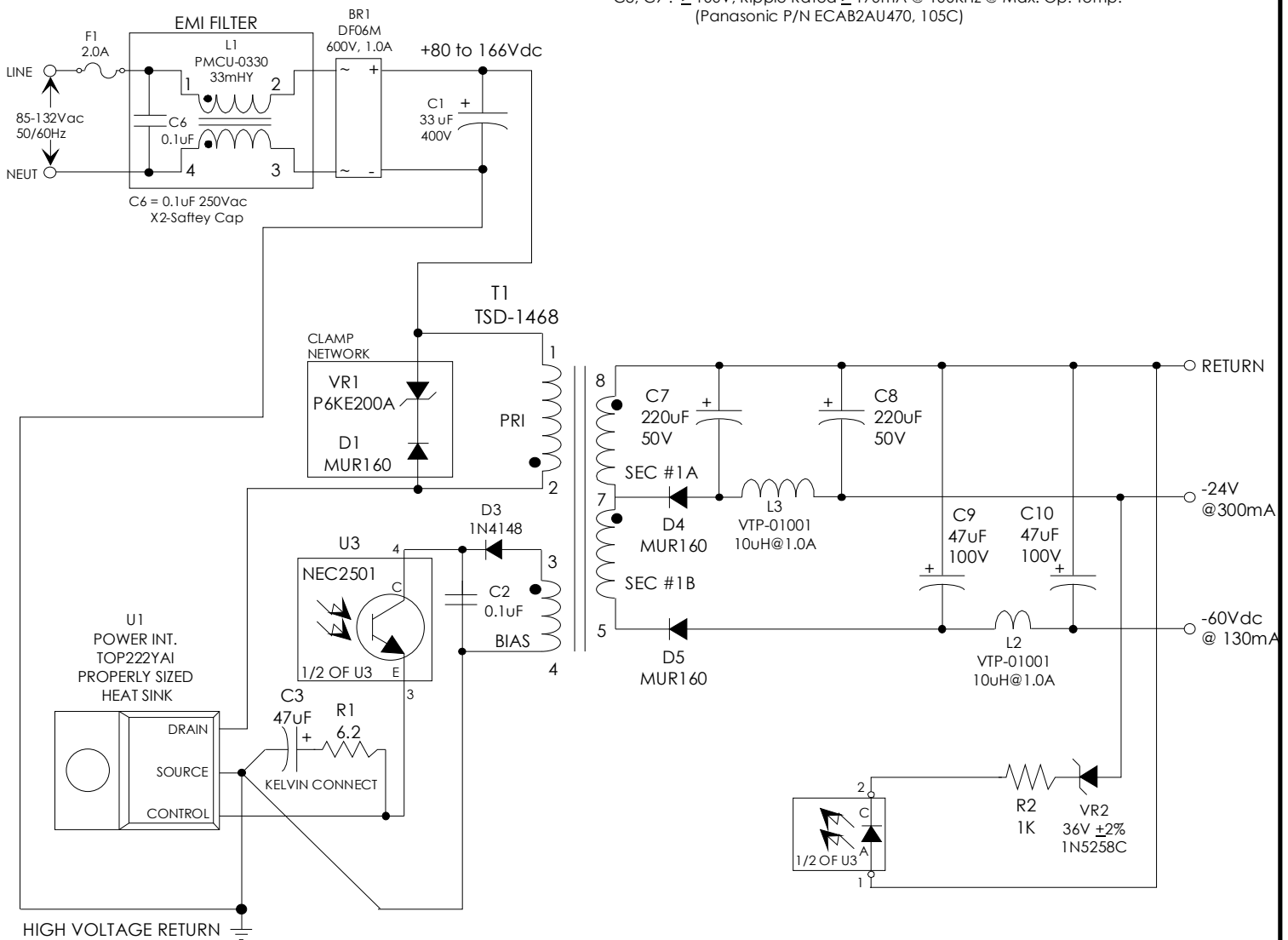
**FIGURE 3: TYPICAL APPLICATION CIRCUIT**

**PREMIER MAGNETICS PART NUMBERS:**  
(REQUEST DATA SHEETS BY PART#)

- L1 = PMCU-0330 33mHy EMI/RFI CMC
- T1 = TSD-1468 MAIN SWITCHING TRANSFORMER
- L2 = VTP-01001 10uHy@1.0A INDUCTOR

**ALUMINUM ELECTROLYTIC FILTER CAPACITOR RATINGS:**

- C1 :  $\geq 400V$ , Ripple Rated  $\geq 140mA$  @ 120Hz @ Max. Operating Temp. (Nichicon P/N UVX2G330MHA, 85C)
- C7, C8 :  $\geq 50V$ , Ripple Rated  $\geq 367mA$  @ 100KHz @ Max. Op. Temp. (Panasonic P/N ECA1HFG221, 105C)
- C8, C9 :  $\geq 100V$ , Ripple Rated  $\geq 170mA$  @ 100KHz @ Max. Op. Temp. (Panasonic P/N ECAB2AU470, 105C)



UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN MM  
DIMENSIONAL TOLERANCES ARE:  
DECIMALS ANGLES  
.X ± .25 ±0° 30'  
XX ± .15  
DO NOT SCALE DRAWING

TRANSFORMER CONTROL DRAWING	
PREMIER P/N: TSD-1468	REVISION: 10/19/99
DRAWN BY: PETER PHAM	REF: PWR-TOP222YA1
SCALE: NONE	SHEET: 2 OF 2